IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION

SHERRY COX, et al.	:	**Civil Action No. C-1-01-643**
Plaintiffs,	:	**Judge Beckwith**
	:	**Magistrate Hogan**
vs.	:	
METABOLIFE INTERNATIONAL, INC.	:	
Defendant	:	

BARBARA J. BRADLEY, et al.	:	**Civil Action No. 02-CV-809**
Plaintiffs,	:	**Judge Beckwith**
	:	**Magistrate Hogan**
vs.	:	
METABOLIFE INTERNATIONAL, INC.	:	
Defendant	:	

MEMORANDUM IN SUPPORT OF PLAINTIFFS' MOTION TO EXCLUDE DEFENDANT'S EXPERT WITNESS TESTIMONY

I. LEGAL ARGUMENT

A. The Legal Standard for the Admissibility of Expert Testimony.

The United States Supreme Court requires that the district court exercise its responsibility to act as the "gatekeeper" for testimony based upon "scientific, technical or other specialized knowledge." *See* Fed. R. Evid. 702; *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L. Ed. 2d 469 (1993); *Kumho*

Tire Co., Ltd. v. Carmichael, 119 S. Ct. 1167 (1999). Trial courts must determine, pursuant to Fed. R. Evid. 104(a), whether proposed expert testimony is (1) scientific knowledge (2) that will assist the trier of fact to understand or determine a fact in issue. *Daubert*, 509 U.S. at 592. The factors to be considered include: (1) whether the theory has been empirically studied or tested and the nature of the methodology used; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known and potential rate of error; and, (4) whether the theory or technique enjoys general acceptance within the scientific community. *Id.* at 590-95. The focus must always be on the principles and methodology, not on the conclusions that they generate. See *Daubert,* 509 U.S. at 595.

B. Dr. Molgaard's Testimony Must Be Excluded.

Dr. Molgaard is a professor of Preventive Medicine and Public Health. He is not a medical doctor, and is offered by the Defendant in both the *Cox* and the *Bradley* cases to testify as to whether ephedra can cause stroke. Dr. Molgaard states in his affidavit that he has read the available scientific literature on the subject of ephedra, and, as a result of his review, he has concluded that there is no epidemiological evidence specific to ephedra establishing that ephedra causes stroke. (*See* Defendant's Motion, p.21-22 and Ex L, paragraph 4). However, Dr. Molgaard fails to consider whether other scientific evidence, including studies on the pharmacologic properties of ephedra, epidemiology studies identifying the risk factors for stroke, data from clinical trials of ephedra, and information from case reports and other reports of clinical experience, provide substantial and reliable evidence that ephedra does indeed cause stroke. Because Dr. Molgaard has improperly limited his opinion to only one

source of data, it must be excluded under *Daubert* as unreliable and not helpful to the issue of causation.

As discussed at length in Plaintiffs' Response to Defendant's Motion for Summary Judgment, epidemiological evidence specific to ephedra is not essential to establish that ephedra causes strokes.[1] *See, e.g., Hardyman v. Norfolk & Western Railway Co.*, 243 F.3d 255, 261-67 (6th Cir.2001) (district court abused its discretion in excluding plaintiff's expert where expert's opinion was based on a differential diagnosis rather than epidemiologic evidence); *see also Rider v. Sandoz Pharmaceuticals Corp.*, 295 F.3d 1194, 1199 (11th Cir.2002) ("[t]his Court has long held that epidemiology is not required to prove causation in a toxic tort case."); *In re Berg Litigation*, 293 F.3d 1127, 1130 (9th Cir.2002) ("[n]or is epidemiological evidence the sole method of establishing causation"); *Benedi v. McNeil-P.P.C., Inc.*, 66 F.3d 1378, 1384 (4th Cir.1995) ("[u]nder the *Daubert* standard, epidemiological studies are not necessarily required to prove causation, as long as the methodology employed by the expert in reaching his or her conclusion is sound."); *Glastetter v. Novartis Pharm. Corp.*, 252 F.3d 986, 992 (8th Cir.2001) (per curiam) ("[t]he absence of epidemiological evidence did not doom [plaintiff's] case"); *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 758 (3d Cir.1994) (discussing differential diagnosis as a method of assessing causation); *Caraker v. Sandoz Pharm. Corp.*, 188 F.Supp.2d 1026, 1033 (S.D.Ill.2001) ("[t]hisCourt imposes no absolute epidemiology requirement"). Dr. Molgaard simply disregards the evidence

[1] In their Response, Plaintiffs set out for the Court the totality of evidence that Plaintiffs' experts have relied upon which are admissible and fully in line with the criteria set forth under *Daubert:* scientific and medical literature, the pharmacologic properties of ephedra as they relate to the biologic mechanisms and through comparison to like agents, case and adverse drug reports, textbook and treatises, clinical experience and studies, and scientific knowledge about ephedra's properties based on scientific data and scientific techniques relied upon by medical experts. *Id.*

establishing the pharmacologic properties of ephedra (i.e. that ephedra raises blood pressure and heart rate), and disregards substantial epidemiologic evidence establishing that increased blood pressure and heart rate cause stroke. (See Affidavits and Reports of Plaintiffs' experts Drs. Maggio and Buncher attached as Exs. 6 and 8 to Plaintiffs' Response to Defendant's Motion for Summary Judgment filed on July 22, 2003) Therefore, he ignores the reliable scientific evidence which establishes that because ephedra causes increases in heart rate and blood pressure, it therefore increases the risk of stroke. *See, e.g.*, Plaintiffs' Response, p.22-23.

Dr. Molgaard's opinion, that causation cannot be established unless and until epidemiologic studies are designed which specifically study the long term adverse effects of ephedra, conflicts with the opinion of the medical community. As Dr. Molgaard admits, clinicians make evaluations every day based upon reliable evidence of pharmacology, clinical experience and established scientific facts, even when definitive epidemiology studies have not been conducted on a specific product.[2] Thus Dr. Molgaard testified that he understands why the American Medical Association and the American Heart Association would have "concerns regarding ephedra herbal products." (See Docket No. 113, Molgaard depo. at p.81.) Dr. Molgaard explains that the AMA and the AHA "would look at it from a clinical point of view and would say that – here we have a product which increases blood pressure, and that may not be a good thing, from – a clinician would probably say that." (Molgaard depo. pp.81-82). Dr. Molgaard was then asked whether he would share that concern regarding the safety of

[2] Published epidemiology studies have concluded that ephedra in doses exceeding 32 mg. per day be associated with an increased risk of hemorrhagic stroke. (Molgaard depo. at 77-79, discussing Morgenstern, et. al. "Use of Ephedra-containing products and risk for hemorrhagic stroke," *Neurology* (2003), 60:132-135.)

ephedra to the general population due to the hypertensive potential of the product. Dr. Molgaard answered: "I would share in the concern; but given what I do for a living, I would be mainly interested in finding out what the epidemiology studies are showing us." (Id.)

In fact, Dr. Molgaard agrees with Plaintiffs on significant points concerning the pharmacology of ephedra and the risk factors for stroke. He agrees with the Plaintiffs that ephedrine is a potent central nervous system stimulant (Molgaard depo. at pp.43-44, 48); that ephedrine increases blood pressure (Molgaard depo. at p.81); that elevated blood pressure is the most significant predictor of cerebrovascular events based upon a study which he authored, (Molgaard depo. at pp.49-50); and that epidemiology studies establish that hypertension is a significant risk factor for stroke. (Molgaard depo. at pp.81-82). He also agrees that stimulant drugs have been associated with increased risk of stroke in epidemiologic studies and that ephedra is a stimulant drug. (Molgaard depo. at pp.48-49.)

Based on these admissions, Dr. Molgaard concedes that ephedra can be considered by a clinician to be a cause of stroke, while he confines his opinion to population studies. (Molgaard depo. at pp.82-84.) Specifically Dr. Molgaard testified as follows:

> Q. So, what you do for a living is to look at whether it's been established that a particular exposure such as ephedra has caused in the general population an increase in a specific adverse event, an increase in the occurrence rate of a specific adverse event; is that right?
>
> A. That's correct.

Q. And you do that as opposed to looking at whether any given individual actually suffered an adverse event from a particular exposure?

A. Right, because I'm – since I'm not a clinician, I'm not an M.D., my thing is population based analysis.

Q. So, you wouldn't have any opinion on whether any given individual who took ephedra suffered from a stroke or a heart attack as a pharmacologic response to the ephedra?

A. Well, my opinion is limited to what – what the epidemiology of ephedra is at this point in time, what are the published papers telling us. What's happening to individuals is a clinical issue and my thing is to try to say well, do we have evidence-based medicine that this is a risk factor or do we not, or do we need to do more research to find out for sure?

(Molgaard depo. at pp.82-83.) Because Dr. Molgaard cannot give testimony regarding whether ephedra can cause stroke or heart attack in any individual, his testimony is not helpful to the trier of fact and should be excluded.

Moreover, even though Metabolife relies on Dr. Molgaard to review the "available" scientific literature, it became evident in his deposition that Dr. Molgaard's "review" had not been thorough. He had not read important articles on the safety of ephedra prior to writing his report and prior to his giving deposition testimony. He had not read certain important position papers, and furthermore had superficial knowledge of the studies that were performed regarding safety and/or risks with respect to ephedra herbal products.

Dr. Molgaard admitted that he did not know that there was a mix-up of the raw data in the 6 month Boozer study. (Molgaard depo. at pp.109, 111, 114-115.) He did not know that Dr. Boozer knew of the mix-up in the underlying data in her study but did not advise her publisher, The International Journal of Obesity (IJOB), of the unreliable

data before the article was published. (Id.) He likewise was unaware that Dr. Boozer eventually wrote a letter to the IJOB regarding the data mix-up. (Molgaard depo. at p.111.) Dr. Molgaard did not know that the FDA had requested that Dr. Boozer re-check her data and that the FDA eventually formed a special panel to review Dr. Boozer's data, and that members of the FDA Panel concluded that her study was unreliable. (Molgaard depo. at pp.111-112, 56-57.) Dr. Molgaard did not know (until Metabolife's counsel told him during the lunch break) that Dr. Boozer had testified at a congressional hearing, testifying that she did not recommend Metabolife for weight loss. (Molgaard depo. at p.108.)

Dr. Molgaard admitted that in his review of the "available scientific literature" he had not read several of the newest and most important articles to come out regarding the risks of ephedra. He had not reviewed the Haller article published in the New England Journal of Medicine[3] (Molgaard depo. at p.46) and he had not read the recent article by Bent[4]. (Molgaard depo. at p.34.) Dr. Molgaard notes specifically in his report that he did review the Rand Corporation report relating to dietary supplements containing ephedra. (Molgaard depo. at p.36.) However, Dr. Molgaard did not know, prior to his deposition, that two of the four studies on which the Rand report relied are based on flawed data. (Molgaard depo. at pp.59-61.)

Also, some of the materials Dr. Molgaard did review were out of date. Dr. Molgaard listed that he had reviewed the first GAO report that came out in July of 1999. (Molgaard depo. at p.40.) Apparently Dr. Molgaard was not aware of or did not review

[3] Haller, et. al., "Pharmacology of Ephedra Alkaloid and Caffeine after Single Dose Dietary Supplement Use," *New England Journal of Medicine*, June 2002

[4] Bent, et.al., "The relative safety of Ephedra Compared to Other Herbal Products," *Annals Internal Med* (2003); 138-468-472, establishing that ephedra results in an increase in adverse event health calls to Poison Control Centers of 100 to 720 times that of other herbal products.

the most recent GAO report that recently was published in July of 2003. (See Ex. A. to Plaintiffs' Supplemental Response filed August 20, 2003.) The findings in the 2003 report are quite different from the previous Report. The earlier Report implied that the adverse event reports on Ephedra were not very helpful in coming to conclusions regarding its safety in the marketplace. On the other hand, having thousands more adverse event reports available and also further studies on ephedra having been published, the 2003 GAO Report states that, based on adverse event reports which were consistent with the known risks of ephedra and based on the pattern of adverse event reports FDA has received and the consistency of those reports with the known effects of ephedra from the scientific literature, the agency has concluded that ephedra poses a "significant public health hazard."[5] Id. Dr. Molgaard also did not recall reading the FDA announcement on February 28, 2003 that it was proposing stricter limitations on ephedra and therefore opened a comment period. (Molgaard depo. at pp.90-91.) Dr. Molgaard's list of references reviewed includes the response from Senator Burton to the Durbin Report[6], however, Dr. Molgaard did not review the Durbin report itself.

In conclusion, Dr. Molgaard is utilized by the Defendant to opine on causation, but he admittedly considers only one source of data, that being published epidemiologic studies regarding cardiovascular adverse effects conducted specifically to examine ephedra. Because the industry performed no such studies concerning serious adverse events, Dr. Molgaard concludes that causation cannot be proven. In forming this

[5] In 2002, after the 1999 report was published, Metabolife International Inc. turned over approximately 17,000 adverse event reports that had been requested by the FDA for years but had never been released.

[6] "Adverse Event Reports from Metabolife", Prepared For Senator Richard J. Durbin, Rep. Henry A. Waxman and Rep. Susan A. Davis, Minority Staff Report, Special Investigations Division, Committee on Government Reform. October 2002. The Durbin Report criticized Metabolife for its extremely poor recording of its adverse event reports and, further, showed great concern regarding the many significant adverse events reflected in the reports.

opinion, Dr. Molgaard simply disregards substantial scientific evidence, including epidemiology studies establishing the risk factors for stroke, pharmacology studies proving the effects of ephedra, epidemiology studies on stimulants and stroke, and clinical reports establishing that the cardiovascular adverse effects of stroke and heart attacks predicted by the science are actually occurring in the field. (See Affidavits and Reports of Plaintiffs' experts Drs. Maggio and Buncher attached as Exs. 6 and 8 to Plaintiffs' Response to Defendant's Motion for Summary Judgment filed on July 22, 2003) Dr. Molgaard relies instead upon a selective review of the scientific evidence, including several studies known to be flawed, and an incomplete review of the literature. Moreover, he concedes he cannot address individual causation. As such, Dr. Molgaard's opinion fails to meet the standards of reliability and helpfulness required under *Daubert* and must be excluded from evidence.[7] *See, e.g., Daubert*, 509 U.S. at 590, 113 S.Ct. 2786 (proposed testimony must be supported by "'good grounds,' based on what is known."); *United States v. City of Miami*, 115 F.3d 870, 873 (11th Cir.1997) (opinion testimony based on erroneous data excluded); 874 F.Supp. 1441, 1471-72 (D.C. Virg. Isl.1994) (expert opinion based upon study was excluded under *Daubert* where expert's opinion contained misrepresentations about the study due to expert's failure to review the underlying data and prior drafts of the study, and where expert was first made aware of flaws in the study during cross-examination).

C. Dr. Millard's Testimony Must Be Excluded.

Defendant retained Dr. Millard to offer an opinion in both the *Cox* and *Bradley* cases. Dr. Millard is a Professor of Pharmacology and is not a medical doctor.

[7] Dr. Molgaard also admitted he has been handsomely paid for his consultation work for ephedra manufacturers, having spent 25% of his waking hours over the last two years in consulting for defendants, for which he estimates to have been paid $150,000.00. (Molgaard depo. at 131-132).

Defendant offers Dr. Millard to testify that there are no valid studies which support a conclusion that Metabolife causes stroke or heart attack.

As is the case with Dr. Molgaard, Dr. Millard disregards scientific evidence which establishes that individuals suffer widely variant effects from the ingestion of ephedra, including dramatic increases in blood pressure and heart rate. (See Docket No. 110, Millard depo. at p.49 (I am not aware of any large changes [in blood pressure]); Millard depo. at pp.61-66 (unwilling to agree with study authors that ephedra caused hypertension in certain study subjects); Millard depo. at pp.76-77 (disagrees with statement in Rand Report that "In the cardiovascular system, ephedrine increases heart rate and therefore cardiac output"); Millard depo. at pp.141-147 (not familiar with Astrup study where one patient developed hypertension of 185 over 125 after ingesting ephedra product, but finally agrees that study author considered response drug-related.)) Dr. Millard disagrees with the position of the American Heart Association that ephedra should be removed from the market (Millard depo. at p.91); and that ephedra has caused heart attacks, stroke high blood pressure and death. (Millard depo. at pp.123-124) Even though he never reviewed the evidence (Millard depo. at p.161), Dr. Millard disagrees with the FDA concerning the Rand Report's conclusion that ". . . In conjunction with other recent studies of serious adverse events involving persons taking ephedra, the Rand study adds significantly to the evidence suggesting that ephedra as currently marketed may be associated with unreasonable safety risks." (Millard depo. at pp.156-162) Dr. Millard even disagrees with Goodman & Gillman's description of the pharmacology of ephedrine. (Millard depo. at pp.153-54.)

Like Dr. Molgaard, Dr. Millard is offered by the Defendant simply to state that there are no epidemiological studies specifically analyzing adverse effects of stroke and heart attack after long term use of ephedra. (Millard depo. at pp.135-36.)[8] Yet Dr. Millard wrote in his notes, dated November 2002, the following: "Can natural or synthetic sympathomimetic amines increase heart rate, blood pressure, cause heart injury, possibly hemorrhagic stroke, and death? Answer: Yes. Such drugs can cause the effects listed here regardless of whether the drugs are derived from natural sources, endogenous to the body, ingested from plants, or from synthetic sources." (Millard depo. at p.135.) Furthermore, like Dr. Molgaard, Dr. Millard relied upon the flawed Boozer study (Millard depo. at p.91), but was unaware of the flaws in the Boozer data when he formed his opinions (Millard depo. at p.97)[9], and is unfamiliar with many recently published ephedra articles. (Millard depo. at p.133.)[10]

In addition, as is the case with Dr. Molgaard, Dr. Millard concedes that ephedra can cause dramatically increased blood pressure in certain individuals. (Millard depo. at pp.111-14, (regarding hypertension in treated patients in the Haller 2002 study); Millard depo. at p.135 (regarding his notes that ephedrine can cause heart attack, stroke and death); Millard depo. at p.176 (cannot refute that normotensive patients in ephedra studies have developed hypertension and been excluded from the studies); Millard depo. at p.83 (agrees that ephedrine raises blood pressure.)) Dr. Millard also concedes

[8] The Morgenstern case-control epidemiology study, however, does support such an association between ephedra use and hemorrhagic stroke. (Millard depo. at pp.133-134.)

[9] Dr. Millard nonetheless continued to rely upon the Boozer study when he learned it was flawed, and simply accepted the representation that the flaws were not significant without any further investigation. (Millard depo. at pp.97-103.)

[10] Studies published on ephedra since December 2, 2002 that are case-controlled or meta-analysis studies include Shekelle, et. al, "Efficacy and Safety of Ephedra and Ephedrine for Weight Loss and Athletic Performance: A Meta-analysis" *JAMA* 2003; 289:1537-1545; Cantu, et.al, "Stroke associated with sympathomimetics contained in over-the-counter cough and cold drugs," *Stroke* 2003; 34:1667.

that sustained hypertension causes stroke. (Millard depo. at pp.126-127; Millard depo. at p.181.) Yet he claims that insufficient evidence exists to establish that ephedra causes stroke, because no prospective study exists proving that persons ingesting ephedrine suffer "sustained hypertension." (Millard depo. at pp.172-173.) Yet he admits that no prospective study specific to ephedra has been conducted in which persons develop "sustained hypertension" and progress to have strokes, because persons who develop hypertension during studies are immediately removed from the drug and excluded from the studies. (Millard depo. at pp.176-182.) Because a prospective study on ephedra which required that persons who develop hypertension to remain in the study until they collapse from heart attack or stroke would be unethical (Millard depo. at pp.178-183), it appears that Dr. Millard would never have an opinion that ephedra can cause heart attacks or stroke. (Millard depo. at pp.179-180.) *See also, Miller v. Pfizer Inc.*, 196 F.Supp.2d 1095, 1113 at fn.63 (noting that prospective studies putting patients on drugs with the purpose of measuring how many will commit suicide would be unethical);

Dr. Millard acknowledges that studies prove that individuals do suffer hypertension after ingesting ephedrine, and that they are thereupon removed from the drug and excluded from the studies. Dr. Millard concedes that because ephedra can cause hypertension, he cannot address whether any given individual who ingests ephedra on a long term basis will unknowingly develop sustained hypertension and suffer the resulting complications of seizure or stroke. Dr. Millard finally testified:

> Q. So Dr. Millard, is it fair to say that you are not able to address whether any specific individual who has an adverse outcome such as stroke or a seizure or a heart attack suffered that result because of taking ephedra?

A. I think that's correct. Yes.

Millard depo. at pp.184-85.

Accordingly, Dr. Millard's testimony, like that of Dr. Molgaard, cannot address the specifics of any individual experience with ephedra. Because his opinion fails to address individual causation, contradicts the consensus of the scientific community, ignores evidence of the pharmacology of ephedra and the scientific consensus that increased blood pressure causes stroke, contradicts his own notes from November of 2002 and sets an impossible and unethical standard for proof of causation, it is not helpful to the trier of fact and should be excluded under *Daubert*.

D. Dr. Rordorf's Testimony Must Be Excluded.

Defendant's reliance on Dr. Rordorf is uncertain and curious. Defendant attaches Dr. Rordorf's affidavit to their Motion for Summary Judgment in the *Cox/Beckman* case but not in the *Bradley* case. In the *Cox* case, Dr. Rordorf, an Assistant Professor of Neurology, is not offered by Defendant in their Motion to dispute the testimony of plaintiff's expert, Dr. Woo, the Neurologist specializing in the epidemiology of stroke. Defendant counters Dr. Woo's opinions only with the findings of Dr. Pfalzgraf, the county coroner[11] (See Plaintiff's Response to Defendant's Motions for Summary Judgment, pp.26-27.) Dr. Rordorf is utilized in Defendant's Motion to opine

[11] Defendant asserts that the county coroner's statement is the "legally accepted" manner and cause of death and should be given "much weight". Defendant cites to *Vargo v. Travelers Ins. Co.* (1987), 34 Ohio St. 3d 27, but Defendant's description of the holding in *Vargo* in not accurate. See Defendant's Motion in Cox, p.17-18. The Ohio Supreme Court actually held: "[T]he coroner's factual determinations concerning the manner, mode and cause of the decedent's death, as expressed in the coroner's report and death certificate, create a nonbinding, rebuttable presumption concerning such facts in the absence of competent, credible evidence to the contrary." 43 Ohio St. 3d at 30. While this holding may permit deference to the coroner's conclusions regarding the role of the aneurysm in Ms. Beckman's death, it does not establish coroners as an authority on the cause of berry aneurysms or the pharmacology of ephedra.

that Ms. Beckman - a 51-year-old woman who smoked – fits the most common epidemiological description of a person who suffers a subarachnoid hemorrhage. (Defendant's Motion in *Cox*, p.8.) Needless to say, this is a generalization which has no place in arriving at causation.

Dr. Rordorf states in his deposition that he agrees that hypertension is a risk factor for stroke (See Docket No. 113, Rordorf depo. p.27); that continued use of ephedra can cause continued increases in blood pressure (Rordorf depo. pp.39-40); that hypertension is a risk factor for the development of berry aneurysm (Rordorf depo. p.72); and, that the changes in Ms. Beckman's heart on autopsy is consistent with hypertension (Rordorf depo. pp.91-92). But Dr. Rordorf states in his affidavit: "The most common reported side effects of ephedrine are increase in blood pressure and heart rate, which Mrs. Beckman did not have." (Rordorf affidavit, at ¶ 3, attached as Ex. E to Defendant's Motion for Summary Judgment against Sherry Cox) (emphasis added). Dr. Rordorf then concedes the opposite in his deposition. He admitted, upon questioning, that Ms. Beckman experienced high blood pressure prior to her stroke during the time she was ingesting ephedra, and that she had no prior history of hypertension before her ephedra use. (Rordorf depo. at pp.77-78, 89-90.) Because Dr. Rordorf simply disregards and distorts the medical record, his opinion has no reliable basis and must be excluded under *Daubert*.

Dr. Rordorf further attests in his affidavit that a berry aneurysm is "a congenital defect". (Defendant's Motion, Ex. 5, paragraph 8). By definition, a congenital defect is something a person is born with. However, in his deposition, Dr. Rordorf testifies to the opposite, and agrees with Plaintiff's expert in Neurology and Epidemiology that a berry

aneurysm can develop during one's lifetime and that Ms. Beckman's berry aneurysm could have formed shortly before her death. (Rordorf depo. at pp.66-67, 96-97.) Thus Dr. Rordorf's testimony in his deposition directly contradicts statements in his affidavit. These statements are of primary significance to the causation analysis of Ms. Beckman's stroke and subsequent death. Because Dr. Rordorf's testimony contradicts his affidavit and contradicts the medical records, his testimony must be excluded as unreliable under *Daubert*.

II. CONCLUSION

In light of the above, it is clear that the testimony of Defendant's expert witnesses lacks any scientific foundation, is inconsistent and contradictory, is based on speculation, and is the type of unreliable, non-scientific speculation that does not follow the paradigm set forth in *Daubert*, and therefore, must be excluded.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on this 12th day of September, 2003, a true and correct copy of the foregoing *Memorandum in Support of Plaintiffs' Motion to Exclude Defendant's Expert Witness Testimony* was electronically filed with the Clerk and was served via electronic mail service through the Clerk and/or via first class mail to the following:

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